

**Abstract**

A planar device having rows of M optical circuit stages is disclosed. Each optical circuit stage is connected to an adjacent optical circuit stage by N parallel waveguides. The N parallel waveguides have substantially no curvature. The circuit layout of the planar device increases the number of components that can be disposed on a wafer. Defective portions of the device can be readily isolated such that production defects do not render the entire device unusable. The planar device of the present invention eliminates many of the problems associated with waveguide curvature between optical circuit stages.